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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,941	06/08/2001	Rodney Thomas Fox	08291-670001	8400

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EXAMINER

GOLLAMUDI, SHARMILA S

ART UNIT PAPER NUMBER

1616

DATE MAILED: 03/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/720,941

Applicant(s)

FOX ET AL.

Examiner

Sharmila S. Gollamudi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Receipt of Change of Address received on November 29, 2002 and Amendment B received on December 30, 2002 are acknowledged. Claims 1-16 are included in the prosecution of this application.

Claim Rejections - 35 USC § 103

Rejection of claims 1-7 and 15-16 under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883 is maintained.

WO teaches a method of precipitating airborne particles by contacting airborne particles with liquid droplets and imparting a charge of +/- .0001 C/Kg using an aerosol device (abstract). The particles treated are within instant range (pg. 9, line 13) and the droplets are in the range of 5-100 microns (claims 5). The liquid composition is a water/hydrocarbon emulsion (pg. 4, lines 1-5). WO teaches the properties of the actuator, the diameter of the dip tube, and the characteristics of the valve impart the desired charge on the liquid droplets (pg. 4).

Although, WO does not specify that the invention is for the method of reducing inhalation of airborne particles, it is deemed obvious to one of ordinary skill in the art at the time the invention was made that removing particulates in the air reduces the chance of inhaling the particulates, thereby reducing the inhalation of airborne particles.

Response to Arguments

Applicant argues that instant invention does not involve the precipitation of airborne particles as taught in WO 97/28883. It is argued that instant invention is directed to reducing the inhalation of particles and the method involves imparting an

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electrostatic charge on the liquid particles during the process of spraying the droplets. It is argued that the charged droplets will disperse as a result of mutual repulsion and move toward surfaces of opposite or neutral surfaces.

Applicant's arguments have been fully considered but they are not persuasive. The examiner points out that WO teaches imparting instant charge (+/- .0001 C/Kg) to liquid droplets with instant particle size and droplet diameter via the process of spraying thorough an aerosol device. WO teaches the theory of mutual repulsion on page 1, lines 29-30 as seen in instant method. Therefore, it is the examiner's position that WO's invention will inherently perform instant invention since both the prior art and the instant invention impart the same droplets, the same charge, and same particle size/diameter. Further, the examiner points out that the "method of reducing the inhalation of airborne particles" is the preamble and is not given patentable weight. Therefore the step given weight is "method comprises imparting a unipolar charge on liquid droplets...", which is disclosed by WO.

Rejection of claims 8-9 and 13 under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883 in view of Grawe (54121897) is maintained.

As set forth above, WO teaches a method of precipitating airborne particles using an emulsion composition in an aerosol device.

WO does not specify the use of a surfactant or a propellant.

Grawe teaches the process of the abatement of contaminants. Grawe teaches the toxicity of airborne particles and the application of a liquid composition to encapsulate the particles for physical removal (col. 6, lines 44-50). The method may be

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applied via an aerosol spray (col. 6, lines 62). The composition may contain surfactants to stabilize the composition from phase separation and lower surface tension (col. 16, lines 32-35). Grawe teaches the inclusion of hydrocarbons for an aerosol device (col. 17, lines 15-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a surfactant to WO's emulsion composition since Grawe teaches the use of surfactants to stabilize emulsions from phase separation. Further, Grawe teaches the use of hydrocarbons (butane or propane) for aerosol devices.

Response to Arguments

Applicant argues that WO does not teach a method of precipitating airborne particles. It is argued that the secondary reference, Grawe, does not cure the deficiency of WO and that the novelty of the invention does not lie in the presence of a propellant and surfactant.

Applicant's arguments have been fully considered but they are not persuasive. The arguments regarding WO have been addressed above. It is noted that the applicant has not specifically addressed Grawe.

Rejection of claims 8-10 and 13-14 under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883 in view of Kulkarni (5191149) is maintained.

As set forth above, WO teaches a method of precipitating airborne particles using an emulsion composition in an aerosol device.

WO does not specify the use of a surfactant or a propellant.

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Kulkarni teaches the state of the art concerning aerosols. The reference teaches the use of pressurized gas of LPGs to spray liquids, which take the form of a mist of small liquid droplets. Aerosols may be used for numerous products such as cleaners, air fresheners, etc. Kulkarni teaches that aerosols contains surface-active agents, stabilizers, solvents, and may contain as much as 90% propellants. (col. 1, lines 5-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings WO and Kulkarni since Kulkarni teaches the state of art of aerosols and teaches that aerosol forms usually contain surfactants and propellants to function.

Response to Arguments

Applicant argues that WO does not teach instant method. It is argued that although Kulkarni teaches aerosols, this is not the point of novelty.

Applicant's arguments have been fully considered but they are not persuasive. The arguments regarding WO have been addressed above. It is noted that the applicant has not specifically addressed Kulkarni or the combination; therefore the rejection is maintained.

Rejection of claims 11-12 under 35 U.S.C. 103(a) as being unpatentable over WO 97/28883 in view of Kulkarni (5191149), in further view of Kalat (4110427) is maintained.

As set forth above, WO teaches a method of precipitating airborne particles using an emulsion composition in an aerosol device. Kulkarni teaches the art of aerosols.

The references do not teach instant surfactants.

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Kalat teaches a water-based composition containing a powder and a hydrophobic phase (propellant). Kalat teaches polyglycerol oleate produces a strong water-in-propellant emulsion and is a good corrosion inhibitor if the composition is packaged in a metal container (col. 5, lines 15-21 and examples).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use polyglycerol oleate in WO's composition since Kalat teaches a water-based composition and teaches polyglycerol oleate produces a strong water-in-propellant emulsion which would be suitable since WO is a water- propellant based composition.

Response to Arguments

Applicant argues that WO does not teach instant method. It is argued that although Kalat teaches the surfactants, this is not the point of novelty.

Applicant's arguments have been fully considered but they are not persuasive. The arguments regarding WO have been addressed above. It is noted that the applicant has not specifically addressed Kalat or the combination; therefore the rejection is maintained.

Rejection claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Malcolm (4541844) is maintained.

Malcolm teaches a method of electrostatic particle collection by spraying liquid droplets of 60 microns or less with an electrical charge of .01 coulombs per kilogram (col. 2, lines 40-45 and claim 1). The method removes particulates between .1 and 20 microns (col. 3, lines 4-6).

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Malcolm does not specify the amount of particles that do not enter the respiratory system.

Although, Malcolm does not specify that the invention is for the method of reducing inhalation of airborne particles, it is deemed obvious to one of ordinary skill in the art at the time the invention was made that by removing particulates in the air, reduces the chance of inhaling the particulates, thereby reducing the inhalation of airborne particles.

In the absence of showing otherwise and since Malcolm teaches all the limitations of claim 1, it is the position of the examiner that volume of particulates that do not enter the respiratory tract of the prior art corresponds to the instantly recited volumes.

Response to Arguments

Applicant argues that Malcolm teaches a dielectrophoretic process for particle collection. Applicant recognizes that Malcolm teaches a method spraying liquid droplets of with an electrical charge onto particles between .1-20 microns. It is argued that instant invention involves a passive charging system and there is no agglomeration of the particles.

Applicant's arguments have been fully considered but they are not persuasive. As discussed above, the actual steps of the method, i.e. imparting a charge onto airborne particles, are given weight. The examiner points out that Malcolm also sprays and imparts the same charge onto airborne particles of the same size; therefore it is the examiner's position that if the method step is the same, then the prior art will inherently

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perform the preamble of instant invention. Additionally, the very process of removing particles from the air reads on "reducing the inhalation of particles of airborne particles" since there are less particles in the air to inhale. Secondly, in regards to Malcolm's process requiring voltage, the examiner points out that the instant claim language does not excluded the application of voltage. Further, it is pointed out that the claims only recite a spray device and Malcolm teaches a spray tower; therefore the claims read on the broad recitation. In regards to the agglomeration of the particles, it is pointed out that the claims do not recite the feature that the applicant's arguments are based on, i.e. mutual repulsion, and the claim language does not exclude agglomeration.

Rejection claim 5 under 35 U.S.C. 103(a) as being unpatentable over Malcolm (4541844) in view of Inculet et al (5400975) is maintained.

Malcolm teaches a method of electrostatic particle collection by spraying liquid droplets of 60 microns or less with an electrical charge of .01 coulombs per kilogram (col. 2, lines 40-45 and claim 1). The method removes particulates between .1 and 20 microns (col. 3, lines 4-6). Malcolm teaches a spray tower to apply the liquid droplets (col. 3, lines 10-50).

Malcolm does not teach using an aerosol device to apply the liquid composition.

Inculet et al teach an actuator for electrostatically charging an aerosol spray. Inculet teaches that it is known in the art that the application of an aerosol spray may be enhanced by electrostatically charging the spray as it is dispensed from the nozzle. The spray acquires a charge and is attracted to another oppositely charged body (col. 1,

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lines 5-33). Further, the reference teaches aerosol dispensers are portable, self-contained, and economical (col. 2, lines 27-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an aerosol device with an actuator to dispense Malcolm's liquid droplet. One would be motivated to do so since Inculet teaches aerosol devices are portable and economical and the actuator dispenses an electrostatic charge, which is needed for Malcolm's droplets to collect particulates.

Response to Arguments

Applicant argues that Malcolm teaches a dielectrophoretic process for particle collection. Applicant recognizes that Malcolm teaches a method spraying liquid droplets of with an electrical charge onto particles between .1-20 microns. It is argued that Malcolm does not teach instant method of reducing particle inhalation. In regards to Inculet, applicant argues that the novelty of the invention is not the use of an aerosol spray, which is taught by Inculet.

Applicant's arguments have been fully considered but they are not persuasive. Arguments pertaining to Malcolm have been addressed and since the specific combination has not been argued, the rejection is maintained.

Rejection of claims 6-10 and 13-16 35 U.S.C. 103(a) as being unpatentable over Malcolm (4541844), in view of Inculet et al (5400975), in further view of Kulkarni (5191149) is maintained.

As set forth above, Malcolm teaches a method of particle collection by spraying liquid droplets of 60 microns or less and an electrical charge of .01 coulombs per

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kilogram (col. 2, lines 40-45 and claim 1). The method removes particulates between .1 and 20 microns (col. 3, lines 4-6). Inculet teaches the use of aerosol dispensers to electrostatically charge the liquid dispensed.

The references do not teach the hydrocarbons and surfactants in the liquid composition.

Kulkarni teaches the state of the art concerning aerosols. The reference teaches the use of pressurized gas of LPGs to spray liquids, which take the form of a mist of small liquid droplets. Aerosols may be used for numerous products such as cleaners, air fresheners, etc. Kulkarni teaches that aerosols contains surface-active agents, stabilizers, solvents, and may contain as much as 90% propellants. (col. 1, lines 5-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings Malcolm, Inculet, and Kulkarni since Kulkarni teaches the state of art of aerosols and teaches that aerosol forms usually contain surfactants and propellants to function.

Response to Arguments

Applicant argues that Malcolm teaches a dielectrophoretic process for particle collection. Applicant recognizes that Malcolm teaches a method spraying liquid droplets of with an electrical charge onto particles between .1-20 microns. It is argued that Malcolm does not teach instant method of reducing particle inhalation. In regards to Kulkarni, applicant argues that the novelty of the invention is not the use of the composition containing a surfactant.

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Applicant's arguments have been fully considered but they are not persuasive. Arguments pertaining to Malcolm have been addressed and since the specific combination has not been argued, the rejection is maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharmila S. Gollamudi whose telephone number is (703) 305-2147. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jose Dees can be reached on (703) 308-4628. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 305-3014 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

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March 11, 2003

Michael G. Hartley
MICHAEL G. HARTLEY
PRIMARY EXAMINER